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**IMPORTANT: TESTING SHOULD NOT BE DONE  
WITH NIGHT VISION GOGGLES ON.  
DO TEST BEFORE START-UP.**

**INSTALLATION INSTRUCTIONS FOR  
EBC 302VRHMJ-243 EMERGENCY LOCATOR TRANSMITTERS**

PLEASE NOTE: EBC 302VRHMJ-243 transmits on 121.5 MHz and  
243.0 MHz but RECEIVES ONLY on 243.0 MHz

EACH UNIT CONSISTS OF: 1 ELT  
1 MOUNTING BRACKET

1. The ELT must be installed by a certified airframe mechanic. This installation must be entered in the aircraft logbook.
2. The unit can be installed in any convenient location in the aircraft.<sup>1</sup>
3. The antenna should be at least one inch from any metal window post or other metal object.
4. The unit must be vertical with as much of the antenna visible through a window as possible, when viewed from the outside of the aircraft.
5. The mounting bracket supplied with the ELT must be securely attached to the aircraft.<sup>2</sup>

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<sup>1</sup> Due to the extreme compatibility of the EBC 302H series with the SARSAT satellite system the unit puts out a useful signal from virtually any place it is mounted in the helicopter while the absolute best results are obtained when the unit is mounted in the cockpit area, eminently satisfactory results have been obtained from the most unexpected mounting locations. EBC ELTs have been picked up by the satellites when radiating from car trunks, junk yards, and sealed UPS trucks.

<sup>2</sup> The bracket must be secured to a rigid member of the helicopter so that if a force of 100 pounds is applied to the ELT it will not move more than    of 1 inch. Greater movement would suggest that the beacon mounting is not firm enough and establishes a possible false alarm situation in conditions of severe vibration or turbulence. In many cases various military organizations have come up with suggested mounting areas that have been thoroughly researched and found to be preferred locations for specific

6. The shorting wire (with white tag) next to the test lamp must be removed for the unit to be ready for automatic operations, and should be reinstalled only to deactivate the automatic feature, as would be the case if it were necessary to remove or ship the unit (as might be done if the helicopter were swapped for one without an ELT during maintenance).
7. For situations where it is desired to deactivate the automatic feature on a regular basis, such as routine removal of the ELT from the aircraft to stores, a shorting plug with a handle is attached to the lanyard and may be inserted in the two pins where the shorting wire used for shipping was originally installed.
8. With the shipping wire (shorting wire) removed, temporarily place the switch in the "OFF-TEST" position and allow the switch to return to the "ARM" position. This will ensure that the ELT was not activated during the removal of the shorting wire.
9. The mounting brackets supplied with all EBC TSO-C91 emergency locator transmitters meet the airworthiness requirements of FAR PART 23.561 or FAR PART 25.561, as appropriate.
10. Since Emergency Beacon Corporation has no direct control of the actual installation, it is incumbent on the installer to mount the ELT such that all the requirements of FAR 91.52 and FAR PART 23 or FAR PART 25 are met.
11. Be sure to remove the shorting plug attached to the lanyard from the pins before considering the unit mission ready.

### **TEST INSTRUCTIONS**

The EBC "H" series of ELTs differ from other ELTs in that they contain an additional "G" switch oriented ninety degrees to the vertical axis so as to sense any activation forces in the vertical direction. The basic 302-series has an internal omnidirectional "G" switch which senses activation in the complete 360° azimuth plane and has no response in the vertical direction. The "H" series was designed to additionally sense vertical acceleration components as would be found in a helicopter environment and so be responsive to activation forces from any direction.

**DO NOT ACTIVATE THE ELT UNTIL YOU THOROUGHLY UNDERSTAND HOW TO DEACTIVATE THE ELT.** Transmitter is deactivated by momentarily placing switch in the spring-loaded "OFF-TEST" position and allowing the switch to return to the "ARM" position. Normal power for a short period (not more than

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aircraft. These mounting instructions are available from AMSCOM in Redstone Arsenal, Alabama. They should be consulted as a supplement to the instructions included with the unit.

five seconds), and observing that the amber light flickers dimly. Some units will not light the lamp unless you grasp the antenna near its' top, this is normal. If the amber light flickers dimly with or without holding the antenna top then the batteries should be replaced before the expiration date indicated on the unit itself (or on the batteries inside). Replacement batteries (factory approved), Model GS-21, are obtainable from Emergency Beacon Corporation (914/235-9400) (NSN assigned is 6135-01162-0943). The emergency signal (PEOW-PEOW) may be monitored on the aircraft transceiver on 121.5 MHz or 243.0 MHz.

TO MANUALLY ACTIVATE THIS ELT, move the switch to the "ON" position. to test the AUTOMATIC ACTIVATION feature on the "H" series it is necessary to perform two activations to insure that both "G" switches are able to turn on the ELT. Tune the aircraft receiver to 121.5 MHz or 243.0 MHz. With the switch in the "ARM" position, hold the ELT with the antenna pointed vertically towards the sky and with your arm fully extended, horizontally swing the ELT around your body, (like a forehand tennis swing), as fast as possible. This may take some practice since it takes a great deal of force to simulate a crash. Proper activation will be indicated when the PEOW-PEOW signal is heard through the aircraft receiver. Deactivate the ELT after each test by momentarily placing the switch into the "OFF-TEST" position and allowing the switch to return to the "ARM" position.

With the ELT reset from the previous activation you can test the vertical activation by holding the unit at arm's length with the antenna pointed towards the horizon. Swing the ELT around your body, (like a forehand tennis swing) as fast as possible. This should be done in the same manner as the previous test except that the antenna is now horizontal instead of vertical. Proper activation will again be indicated when the PEOW-PEOW signal is heard through the aircraft receiver. Deactivate the ELT after each test by momentarily placing the switch in the "OFF-TEST" position and allowing the switch to return to the "ARM" position.

### **VOICE TRANSMIT TEST PROCEDURE**

The "J" in the ELT model number (such as EBC 302VHMJ) denotes a jack designed to accept a standard SPH4 headset equipped with a UG174/U connector.

Also included in the EBC 302VHMJ model is a single PUSH-TO-TALK (PTT) button which is used to enable voice transmission.

On models such as the EBC 302VRHMJ a second push button, the PUSH-TO-RECEIVE (PTR) button, is also included to activate the receiver.

TO TRANSMIT VOICE on the Model EBC 302VRHMJ-243.0, plug in the SPH4 headset and turn the ELT on. Now press the PUSH-TO-TALK (PTT) button which is the button located farthest away from the headset jack. The ELT signal is halted and voice modulation from the headset microphone is transmitted. The ELT will now transmit voice modulation as long as the PRESS-TO-TALK (PTT) button is depressed and the operator speaks into the microphone. Upon the release of the PUSH-TO-TALK (PTT) button the beacon will resume normal ELT signal. It will transmit voice on 121.5 and 243.0 MHz frequencies simultaneously.

### **RECEIVER TEST PROCEDURE**

The EBC 302VRHMJ-243 has an additional button, PUSH-TO-RECEIVE (PTR) button, which is located in between the PUSH-TO-TALK (PTT) button and the headset jack.

The only way the receiver may be activated is to insert the headset plug into the jack and depress the PUSH-TO-RECEIVE (PTR) button. When the PTR button is depressed a rushing noise in the headset indicates normal operation. Using another transceiver (located in a different aircraft, for example) have someone else make a brief, less than five seconds, voice transmission on 243.0 MHz frequency, from a distance of approximately 500 feet to verify normal receiver operation.

When the PUSH-TO-RECEIVE (PTR) button is released, the ELT will revert to the transmission of the normal ELT signal and the receiver will deactivate.

#### **IMPORTANT NOTES:**

- 1) When both the PUSH-TO-TRANSMIT (PTT) and the PUSH-TO-RECEIVE (PTR) buttons are simultaneously depressed the ELTL will be in the receive mode.
- 2) This receiver will respond to strong adjacent channel signals but signals on 243.0 MHz will predominate.
- 3) After completing all operational tests, it is good practice to remove the headset plug from the jack on the ELT.
- 4) Note that in all models the button(s) are rendered inoperative when the UG174/U connector is removed from the headset jack. In this case, the unit will simply function as a standard ELT, reverting to the normal (PEOW-PEOW) ELT signal.
- 5) FAIL SAFE FEATURE: Once the beacon has been activated, either manually or by G forces, and the survivor is using either the voice transmission or voice reception feature, if he should become incapacitated, upon release of the

button(s) the ELT will immediately revert to its normal ELT signal, thus assuring a steady signal for the rescuers to home in on.

### **OPERATING LIMITATIONS**

TSO-C91 requires that the batteries in an emergency locator transmitter must be replaced before the replacement date marked on the ELT and battery, provided that the ELT has been stored in a location where the average ambient temperature has been below 80°F. If the beacon has been stored in a location where the average ambient temperature is normally above 80°F, the battery should be replaced six months sooner. The battery should not be stored in an environment where the average ambient temperature is above 100°F. The battery should be replaced when the beacon has been in use for more than one cumulative hour.

### **BATTERY REPLACEMENT**

**CAUTION:** USE ONLY FACTORY-APPROVED REPLACEMENT BATTERIES, MODEL GS-21 (ALKALINE), OBTAINABLE FROM EMERGENCY BEACON CORPORATION, 15 RIVER STREET, NEW ROCHELLE, NEW YORK 10801, (914/235-9400) (NSN: 6135-01-162-0943)

1. CAUTION – if batteries are not connected exactly as indicated, the ELT will be permanently damaged.
2. Remove screw holding cover and remove cover.
3. Remove wire connectors by unscrewing counterclockwise.
4. Replace batteries.
5. Connect black wire from beacon to black wire on both batteries.
6. Connect the three red wires from beacon to red wires on both batteries.
7. Screw wire connectors on by turning clockwise.
8. Install cover and screws.
9. Install new “Replace Battery Before” label on side of ELT.

**SUPPLEMENTAL INSTRUCTIONS**  
**EBC 302VRHMJ-243.0**  
**TO INSURE THE ELT'S READINESS FOR USE**

- A. THE SHORTING WIRE NEXT TO THE TEST LAMP MUST BE REMOVED FROM THE ELT FOR AUTOMATIC ACTIVATION.
- B. WITH THE SHORTING PLUG REMOVED, TEMPORARILY PLACE THE SWITCH IN THE "OFF-TEST" POSITION AND ALLOW THE SWITCH TO RETURN TO THE "ARM" POSITION. THIS WILL ENSURE THAT THE ELT WAS NOT ACTIVATED DURING THE REMOVAL OF THE SHORTING WIRE.

**SUPPLEMENTAL INSTRUCTIONS**  
**MOUNTING**

THE MOUNTING BRACKETS SUPPLIED WITH ALL EBC TSO-C91 EMERGENCY LOCATOR TRANSMITTERS MEET THE AIRWORTHINESS REQUIREMENTS OF FAR PART 23.561, OR FAR 25.561 AS APPROPRIATE.

SINCE EMERGENCY BEACON CORPORATION HAS NO DIRECT CONTROL OF THE ACTUAL INSTALLATION IT IS INCUMBENT ON THE INSTALLER TO MOUNT THE ELT SUCH THAT ALL THE REQUIREMENTS OF FAR 91.52, AND FAR PART 23 OR FAR PART 25 ARE MET. EMERGENCY BEACON CORPORATION RECOMMENDS THAT THE MOUNTING BRACKET BE SECURELY ATTACHED TO A RIGID MEMBER OF THE FUSELAGE USING FASTENERS THAT COMPLY WITH FAR PART 23.561 OR FAR PART 25.561. IF NECESSARY, A SUITABLE MOUNTING SHELF SHOULD BE FABRICATED BY THE INSTALLER IN ORDER TO PROVIDE A RIGID AND SECURE ATTACHMENT POINT FOR THE MOUNTING BRACKET.

\*\*\*\*\***DO NOT INSTALL THE MOUNTING**\*\*\*\*\*  
\*\*\*\*\***BRACKET TO THIN, UNSUPPORTED**\*\*\*\*\*  
\*\*\*\*\***SKIN OR UPHOLSTERY MEMBERS**\*\*\*\*\*

**EBC-302VRHMJ-243.0 DATA SHEET - TSO-C91 P,AP**

Receiver Operating Frequency	- 243.0 MHz
Operating Life, Room Temperature	- Greater than 48 hours
Operating Frequencies	- 121.500 MHz $\pm$ .005% and 243.000 MHz $\pm$ 005%
Modulation Percentage	- 100%
Sweep Range	- 1000 Hz to 300 Hz
Sweep Rate	- 2 Hz to 4 Hz
Modulation Duty Cycle	- 34% to 55%
Transmitter Duty Cycle	- 100%
Peak Effective Radiated Power	- Greater than 75 mW on both frequencies
Automatic Activation	- Minimum 5 G's, Maximum 7G's, delayed activation system
Low Temperature Performance -20°C	- Meets room temperature specifications after exposure
High Temperature Performance +55°C	- Meets room temperature specifications after exposure
Altitude Performance 50,000 feet	- Meets room temperature specifications after exposure
Decompression 8,200 ft. to 40,000 ft.	- Meets room temperature specifications after exposure
High Pressure Performance – 15,000 ft.	- Meets room temperature specifications after exposure
Humidity Performance 48 hours	- Meets room temperature specifications after exposure
Shock Performance 1000 G's 6 axes	- Meets room temperature specifications after exposure
Vibration Test 10 G's	- Meets room temperature specifications after exposure
Temperature Variation Test	- Frequencies within $\pm$ .005% after exposure
Immersion Test 17 hours salt water	- Meets room temperature specifications after exposure
Waterproofness 20 minute drip	- Meets room temperature specifications after exposure
Headset compatibility (J models)	- Uses SPH4 Military Headset

**TWO YEAR WARRANTY**

FOR YOUR RECORDS:

Type of Equipment: \_\_\_\_\_

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Dealer: \_\_\_\_\_

**PLEASE NOTE: ALL WARRANTIES ARE NULL AND VOID IF NON-FACTORY APPROVED BATTERIES ARE EVER USED IN YOUR ELT.**

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The EMERGENCY BEACON CORPORATION instrument you purchased is conservatively designed and was carefully inspected before shipment. Properly operated in accordance with the instructions furnished, it will provide you with trouble-free service. Should repairs become necessary, write or call EMERGENCY BEACON CORPORATION describing symptoms of faulty operation. Instructions will be sent to you for obtaining service, if factory judges necessary, authorization for shipment will be given to you. Do not ship without first obtaining this authorization. Pack well and insure when shipping. Repairs will be made without charge for materials and labor within two years from date of warranty registration. Transportation charges both ways are to be borne by the customer. Beyond this warranty period fair charges will be made for service by skilled personnel using factory approved/new parts. This warranty is void if:

- 1- ELT is damaged in transit.
- 2- ELT is abused in any way.
- 3- Repair is attempted by persons not authorized by EBC.
- 4- Unapproved battery is installed.

EMERGENCY BEACON CORPORATION, 15 River Street, New Rochelle, New York USA 10801  
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(CUT HERE AND RETURN TO FACTORY)

**TWO YEAR WARRANTY REGISTRATION**

Model No: \_\_\_\_\_ Serial No: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

How did you hear of this product? \_\_\_\_\_

What persuaded you to purchase it? \_\_\_\_\_

Dealer: \_\_\_\_\_ City: \_\_\_\_\_

My name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_



Return this portion to:   EMERGENCY BEACON CORPORATION  
                                  15 RIVER ST.  
                                  NEW ROCHELLE, NY 10801 USA

PLEASE NOTE: ALL WARRANTIES ARE NULL AND VOID IF NON-FACTORY APPROVED  
BATTERIES ARE EVER USED IN THIS ELT.